JDISS CLIENT SEGMENT
FOR GCCS 2.1/2.2

VERSION DESCRIPTION DOCUMENT

Joint Deployable Intelligence Support System
JDISS Client Segment Ver 2.0.4

July 29, 1996

Prepared by:

Office of Naval Intelligence - JDISS PMO
ONI-7JD
Suitland, Maryland

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Technical Review / Date Quality Review / Date

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JOINT DEPLOYABLE INTELLIGENCE SUPPORT SYSTEM
(JDISS)

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1. INTRODUCTION

1.1 Purpose

This document describes the JDISS Version 2.0 (V2.0) client design and configuration. The JDISS Client Segment interfaces with and runs software which is stored in the JDISS Server segment. This document describes only the software configuration of the client itself. For complete information on the composition of JDISS, you must review the Version Description Document for the JDISS Server segment.

1.2 JDISS Overview

The JDISS Program integrates and packages a standard family of applications that are commonly used throughout the joint intelligence community. From its beginnings as a DODIIS infrastructure program, JDISS has provided a standard deployable workstation to guarantee interoperability across theatre and service boundaries. To extend intelligence interoperability to GCCS, JDISS provides a server and client segment which contain the same software packages used in the standard JDISS 2.0 deployable workstation. This provides basic interoperability between GCCS and JDISS for the intelligence mission in GCCS. In addition to providing interoperability, the JDISS Server segment contains certain

organic intelligence functions, such as COTS software to display and manipulate imagery and terminal emulation software to facilitate linkups with intelligence servers. The JDISS Segments also make heavy use of the GCCS Netscape segment to interface with the growing numbers of Intelink and imagery servers that have Web interfaces. JDISS Corporate services expand the array of capabilities to meet almost any intelligence requirement. These are optional COTS and GOTS applications that plug into the JDISS Server and/or Client segments.

2. JDISS CLIENT SOFTWARE CONFIGURATION

This section provides detailed information on the configuration of the JDISS Client Segment, applications, utilities, system settings and directory structures.

2.1 JDISS Software Applications Overview

The JDISS V2.0 software suite consists of both commercial and government software and utilities integrated under the present DoDIIS Common Desktop. At present, JDISS provides a core set of segments that bring a basic level of intelligence functionality to GCCS plus interoperability with standalone / deployed JDISS 2.0 workstations. In GCCS 2.0, JDISS came in a single large segment. In GCCS 2.1, the JDISS segment was divided into a client and server pair of segments, greatly reducing the storage requirements for GCCS client workstations. In GCCS 2.2, the JDISS capability for GCCS comes in four segments: JDISS Server, JDISS Client, and two optional segments - IPA Client and JDISS Video. In addition, the JDISS server segment has been reduced in size as functions were removed which overlapped the GCCS COE. This trend of adding new functional JDISS segments while breaking up the old will continue as JDISS migrates to the Defense Information Infrastructure (DII). Ultimately all of the optional products and corporate services available for the standalone JDISS workstation will become available to GCCS when both systems are DII-based. JDISS 3.0 will in effect be a family of DII COE and JDISS mission applications segments.

2.1.1 JDISS Core Commercial Off-the-Shelf (COTS) Software

The following COTS products are part of the core JDISS 2.0 configuration. These are stored in the JDISS Server Segment and mounted / run by the JDISS Client Segment.

X.desktop Version 3.5 (IXI Ltd.) provides the desktop environment for initiation of JDISS applications. Applications (and utilities) are activated via icon selection from application windows. The hierarchy of windows presented to the user has been designed by the DoDIIS community to provide a common user interface for analysts as they rotate between theaters.

(1) Calculator - provides a standard calculator capability.
(2) Screen Lock - provides the user with the ability to password lock their monitor screen display.
(3) Trash - provides an icon-based "drag and drop" feature for a user to delete files from the workspace.
(4) Clock - provides a user-defined clock interface. Provides multiple time zones and a world map display.
(5) Home directory display - provides the user an icon-based display of the home directory file content.
(6) Clipboard is a temporary "holding area" for text-only material copied from applications such as Applix Word. It provides a cut-and-paste capability for text transfer between windows.

TN3270 with API and Graphics Option Version 4.15 (OpenConnect Systems, Inc.) is a terminal emulation package which allows users on a UNIX platform to perform standard IBM 3270 terminal

functions. It provides "native" access to IBM mainframes (e. g., LANTCOM IDHS, PACOM IDHS, SAFE) for user access to host databases, E-mail systems, and other host applications on which they have accounts.

The ELT-2000 Version 2.0 (Paragon Imaging, Inc.) software package provides the secondary imagery receipt, processing, and dissemination capabilities on JDISS. It allows the user to display and process images of any size subject to memory limitations and CPU speed of the workstation. Image manipulation functions include zoom, pan, and scroll as well as image rotation by variable degrees. ELT-2000 supports non-destructive annotation with defined graphic symbols and freehand drawing. Image region of interest processing as well as subimage creation can be accomplished. Subimages can be saved and processed or they can be cut, copied, and pasted to any image. A text message can be linked with individual images or subimages with no limit on length via a provided text editor.

HIPPIE (High Performance Peripheral Imagery Enabler) Version 3.10 (Vividata Inc.) is a product containing multiple software drivers to allow a variety of COTS printers and scanners to interface to the JDISS workstation. This package is also marketed as Paragon Imaging's ImageExchange PIX product.

Synchronize Version 1.3.01A (Crosswinds Technology Inc.) provides a network calendar function. Users are allowed to share a calendar, thereby easing scheduling conflicts and increasing awareness of other users events and itineraries. Note: This software resides physically in both the JDISS Server and Client segments.

Interleaf World Viewer Version 2.01 (Interleaf Inc.) provides a viewer tool to display hyperlinked documents created with Interleaf electronic publishing software.

Flexlm Version 3.0 is the basis of the license manager that JDISS uses to control the use of software integrated into the JDISS baseline.

DesktopCHATTER Version 2.0.2 (Paragon Imaging) provides chatter functionality between users on different hosts on a network. It provides a graphical user interface to the standard Unix talk function as well as chatter to other protocols on Unix platforms. Chatter protocols supported include otalk, ytalk, ntalk, and Euro-DITDS chat.

Adobe Acrobat is a graphics file format conversion package which supports viewing and printing of Adobe Portable Document Format (PDF) documents.

2.1.2 JDISS Core Government Off-the-Shelf (GOTS) Software

The following GOTS applications are licensed at no cost to government entities. They are stored as core products in the JDISS Server segment and mounted / run by the JDISS Client segment.

The Alert function is a JDISS-to-JDISS function that enables a user to send a high priority message to a remote JDISS user on the network. Capabilities include sending messages as registered alerts for receipt confirmation.

Send_File is a capability which allows a JDISS user to send files to another JDISS without requiring the user to have an account on the destination machine. Files sent are stored in the /usr/tmp subdirectory of the destination machine when a user is not logged in. If a user is logged in, a pop-up message appears which notifies the operator there that a file has arrived and asks where to store it. The originating user is notified whether or not the file arrived successfully.

JPings (JDISS Pings) is a basic communications tool to check whether another workstation is up -- or alive -- on the network.

LLNLXFTP Version 2.0.3 (Lawrence Livermore National Laboratory's "File Transfer Protocol") application is a file transfer capability that enables an analyst to send files to and receive files from a remote machine on the network. The user must have an account on the remote machine to accomplish the file transfers or the user can transfer files to the shared directories using the anonymous account as a guest.

Intelink is an implementation of Web technology on government networks (e.g. JWICS, SIPRNET, ADNET, MILNET, etc.). JDISS currently uses the GCCS Netscape segment to access Intelink. Netscape is a software package that allows a user to navigate to different Web sites and to browse html-formatted documents.

JVOX (JDISS Secure Voice Exchange) is an audio transmission capability developed at the Naval Research Laboratory. The product is implemented to digitize and compress voice, packetize and send voice packets to a user on another host on the network. The capability is essentially the same as currently available voice transmission tools on the Internet. Workstation requires a microphone and 9.6Kbps connectivity or better. Note: This software resides physically in both the JDISS Server and Client segments.

JUIC (Joint Universal Imagery Client) provides Web browser access (via the Netscape segment) to various imagery servers, e.g. 5D and IPA servers.

JDISS Embedded Support (JES) provides an on-line JDISS training and help capability for users. It has been structured using the hypercard COTS software product MetaCard (Version 1.4) and provides training using multi-media presentations for users.

DOS Tools provides for import and export of files on DOS-formatted floppy disks, and also provides a DOS formatting capability for floppy disks.

CDROM reader provides interface software for JDISS to mount filesystems from CDROM.

JDISS Manager provides the interface for the JDISS system administrator to configure access to remote hosts for interaction via JDISS Alerts, Send File, FTP, Pings and Chatter functions. It also controls whether terminal emulation is required with a remote host, and what type of terminal emulation to use, e.g. TN3270, VT100, or NVDET.

Shared Target is a "drag and drop" function on the desktop window. By dragging a file from one directory window and dropping it on the Shared Target icon, the user is copying that file to the Shared Directory. The file is then available to other users to view.

Print Target provides the user an ability to print a file by "dragging and dropping" its icon onto a target icon.

Print Screen provides a capability to print a hard copy of the user selected monitor screen display.

Save Screen allows the user to save a screen image in an X Windows dump (.xwd) format to a file in the user's home directory.

Backup / Restore provides a means for the user to back-up and restore both his home and share directories.

System Load provides a tool for monitoring system CPU usage.

Time Zone Clock is a standard time zone clock displayed on a world map.

Version lists COTS software and corresponding versions loaded on the system; functions as a prototype tool for future use in electronic upgrading.

2.1.3 JDISS Corporate Services for GCCS

JDISS Corporate Services are additional functions or plug-in segments that are installed in conjunction with either the JDISS Server or JDISS Client segment. Corporate Services are typically GOTS applications that are sponsored by other government programs which have gained wide acceptance in the joint intelligence community. The JDISS program maintains packaging control of certain applications that have widespread use in mulitple theatres; these are called Registered Corporate Services. Theatre-unique and site-unique applications are usually created and maintained externally from the JDISS program, although these can evolve to become Registered Corporate Services. Repackaging involves conversion of an application into a segment and integratation to make it work smoothly with the COE and other segments. Some optional COTS products are also repackaged as Corporate Services.

Currently, JDISS Corporate Services segments must be installed specifically on the workstation that requires the functionality. There are no "client/server pairs" of Corporate Services segments. In other words, Corporate Services segments can be installed, and plug in identically, with either the JDISS Client Segment or the JDISS Server Segment. As of this writing, the following JDISS Corporate services have been ported to the GCCS 2.1/2.2 environment:

IPA (Imagery Product Archive) is a client interface to Image Product Archive (IPA) servers. To use it, one needs an account (userid and password) on an IPA imagery servers. It allows a user to query an IPA server and download or upload image files. This function is packaged as the JDISS IPA Segment.

JDISS Video provides device driver and user interface support for use of a Parallax video card. The segment allows a user to view live NTSC video feeds and extract frame grabs and video clips. It also supports viewing and manipulation of Motion-JPEG and MPEG video files. Frame grabs can be stored in a variety of image formats including NITF 2.0, TIFF, PCX, SunRaster, and others. This function is packaged as the JDISS Video Segment.

Xmit provides a user interface to TACO2 - TActical COmmunications. The TACO2 protocol is used to transfer files in low-speed half duplex communications environments such as UHF and EHF links. This function requires installation of the GCCS ICS (Imagery Communications) Segment.

Image Viewer is a GOTS tool for display and manipulation of image files. An icon for this application appears under JDISS Corporate Services. This function requires installation of the GCCS Image Viewer (IVWR) Segment.

ITS Target is a drop target which is used as a convenient method to "drop" an image file into the ITS (Image Transformation Services) imagery database. This drop target icon appears under JDISS Corporate Services. This function requires installation of the GCCS ITS Segment.

Imagery Print Services provides image file format conversion services plus an interface to high-end printer driver support. An icon for this application appears under JDISS Corporate Services. This function requires installation of the GCCS Imagery Print Services (IPS) Segment.

IPS Print Target is a drop target which is used as a convenient method to "drop" an image file to be printed via the IPS Segment. This drop target icon appears under JDISS Corporate Services. This function requires installation of the GCCS IPS Segment.

2.1.4 Future JDISS Corporate Services for GCCS

The applications listed below are a snapshot of the many Corporate Services that are available for the standalone JDISS workstation. This list changes regularly with new applications being added to meet customer requirements and legacy applications removed when no longer needed. Work is underway to port most JDISS Corporate Services to be plug-in segments compliant with the Defense Information Infrastructure (DII) runtime environment. For GCCS 3.0 and future DII-based C4I systems, the JDISS program will be packaging Corporate Services as JDISS mission applications segments.

JDISS Multmedia Collaborative Manager (MCM) is a set of applications which provides an integrated suite of multimedia tools, including desktop video teleconferencing, digital secure voice communications, a shared Web browser, a shared Whiteboard, shared text editing, a broadcast Powerpoint slideshow viewer, and other functions. JDISS MCM makes it easy for a group to collaborate on and switch back and forth between audio, video, text, and imagery subject matter. This capability will be comprised of several component segments including the existing JDISS Video segment.

Digital Camera Interface provides software drivers and a user interface allowing connection of a KODAK DCS 200 or 400 series digital camera to a workstation. This allows snapshot imagery to be uploaded directly to the workstation.

Matrix is a high-end GOTS imagery display and manipulation program.

5D Client is a legacy client interface to 5D imagery servers.

Coliseum (Client) provides client software for Coliseum RFI (Request for Information) servers.

ALE (Aires Life Extension) Client provides client software to interface with DIA's ALE server.

CRMA (Collections Requirements Management Architecture) is a legacy collections planning client program. Upon IOC of the JCMT, a client interface for JCMT servers will replace this corporate service.

Interactive Planning and Analysis (IP&A) is a classified tool for collections planning.

Oilstock is an NSA-developed mapping tool used to store, track, and display near real time and historical data over a high-resolution map or image background.

NRTD (Near Real Time Dissemination) provides SIGINT tactical data feeds which can be displayed using Oilstock.

JATACS (JDISS Advanced Tactical Cryptologic Support) SIGINT Tools including:

- Adversary - Nodal analysis tool used for mission planning
- Sensor Harvest - C2W decision aid interface to biographical country studies DB
- F3S (Field Site Support System) - Inerface to Carillon Database
- NTSS-JDISS Bridge - Near real time feed & display of Klieglight reports
- WEST (Wrangler Exploitation Software Tool) - Interface to Wranger Database
- Sensor Mace - Air Force SCI data analysis tool
- Sensor Phoenix - C2 database
- IMOM (Integrated Many on Many) - Ingress / egress route planning tool.
- Tinman - NSA Traffic analysis tool
- Operational PROFORMA Trainer - Training for operational PROFORMA
- Binocular - Data filter and alerts for NRTD
- RFMP (Radio Freq Mission Planner) - RF propagation analysis
- What If, Waterfall, Teams - Nodal analysis tools

TCAC (Technical Control and Analysis Center) SIGINT tool set developed by the USMC.

JEAP (Joint ELINT Analysis Program) provides a set of real-time ELINT message processing, storage, correlation, and analysis tools. In addition to real-time processing, JEAP provides access to the DIA JEAP and NSA Wrangler databases. JEAP will transition to Gale Lite Ver 4.0.

Frameviewer is a COTS product by Framemaker to view documents written in Framemaker.

Framemaker is a COTS electronic desktop publishing package for creating and viewing complex documentation.

JWICS Scheduler provides terminal emulation interfacing to the JWICS scheduling system.

XLamps enables JDISS users to possess USACOM LAMPS functionality.

XLaunch Manager is the automatic applications launch from USACOM.

XPrint Manager prints desired files to USACOM's network printers.

XStairs facilitates STAIRS queries on USACOM IDHS.

EUCOM Conversion Utility is a numeric conversion utility for distance, latitude / longitude, metric system, etc.

2.1.5 JDISS Optional COTS Segments

Optional commercial products are available as JDISS plug-in segments which can be requested from the JDISS Program Office. Proof of purchase of the requisite COTS license will be required. Typically these products are purchased off the DIA SASS contract.

TEEM-X 4207 (Pericom Software, Inc.) is a terminal emulation package which provides DEC VT100/VT220 and TEKTRONIX 4010, 4014, and 4111 graphics terminal emulation. As an example, VT220 emulation, allows access to systems such as the DSNET3 Network Support Center Mail Host and CATIS. The combined VT220 alphanumeric and TEKTRONIX 401x graphic emulators allow access to the Defense Intelligence Threat Data System (DITDS) on the SOCOM SOCRATES network.

CorelDRAW Version 3.0 (CorelDRAW Inc.) provides a high-end graphics capability to produce publication quality graphics for documents, and allows for the import and export of various graphic formats.

Imagine provides a high end imagery manipulation capability.

Soft Windows provides an emulated Microsoft Windows run-time environment to run DOS/Windows applications on a Unix workstation.

Interleaf World View Press provides a high end electronic document publishing package. The baseline COTS package provides a viewer for documents produced using this package.

ARC INFO is a geographic information system package providing a mapping capability with interfaces to allow other applications to plot data on these maps.

Panorama provides a virtual window manager.

2.1.6 JDISS Server and Client Segment Dependencies

MOTIF 1.2.4 is the underlying windows manager in the GCCS COE. It is necessary to support the JDISS segments as well as most other segments in GCCS.

ApplixWare Version 3.2 or 4.X (Applix, Inc.) is a COTS software suite which provides an integrated set of E-mail, Document, Spreadsheet, and Graphics applications. Applix Word is a full-featured word processing program that can import graphics and spreadsheet files from the other Applix components. Documents created in this way can be attached to Applix E-mail notes for dissemination. The JDISS Server and Client Segments are dependent on the presence of the GCCS Applix segment for many functions.

Netscape Version 1.1 or 2.X (Netscape Inc.) is a COTS Web Browser which is used to query the many Web sites (servers) on various networks. It allows a user to browse html-formatted documents and perform a variety of functions which are still evolving in Web technology. The JDISS Intelink and JUIC functions are dependent on the presence of the GCCS Netscape segment.

2.2 File System and NFS Requirements

The JDISS Server Segment is installed on a GCCS Applications Server in a local area network environment. The JDISS Server segment itself requires approximately 400MB of disk space, however additional space is recommended to support future growth in available JDISS corporate services and/or optional products. The JDISS Client segment requires about 30MB of storage space on each client workstation that will need JDISS functionality. The GCCS JDISS Clients must be able to communicate with the JDISS Server segment at near Ethernet speeds (i.e. 10Mbps) to properly support Network File System (NFS) client mounts of JDISS software on the server. Normally the Applications server also doubles as the JDISS license server (alias lmserver), however if required, JDISS licenses can be supplied by a remote server located anywhere in the LAN or WAN environment. (The Systems Administration chapter of this document provides details about license management and reconfiguring for remote distribution of JDISS licenses.)
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2.2.1 JDISS Filesystems

The JDISS Client has only a minimal subset of JDISS applications physically bundled in the segment. The bulk of JDISS software is NFS-mounted from the JDISS Server segment. However for performance and/or operational requirements, some JDISS applications exist in both the server and client segments. As examples, this is the case for the ivox secure voice application and the synchronize calendar scheduler. These two applications are included in both the JDISS Client and JDISS Server Segments. In addition, currently all JDISS corporate services require dedicated installation on client workstations.

Figure 2.2.1-1. File Structure for JDISS Applications

2.2.1.1 Filesystem for /h/JDISS/

Permissions	Owner	Group	Description
drwxr-xr-x	root	daemon	ivox contains the secure voice software developed by the Naval Research Laboratory for using secure voice.
drwxrwxr-x	root	wheel	sass contains a duplicate copy of the sass license software in case a JDISS Client is required to function as a JDISS license server.
drwxr-xr-x	bin	daemon	synchronize software manages the calendar for JDISS.

2.2.1.2 Filesystem for /h/JDISS/data/share

Under the /h/JDISS/data/share directory additional subdirectories reside which can store appropriate data "dropped in" via the Share Drop Target. Files are placed in the appropriate directory depending on file extension. The subdirectories are:

Documents	Images	Video	Text
Other	Audio		

NOTE: DO NOT remove .(filename) files. These are generally system files, and may have catastrophic consequences if they are removed or altered.

2.3 EMail

Shared email is local to each workstation. An alias is set in the /etc/aliases file to point the shared email to /h/JDISS/data/share/sharespool. Mail to the shared user at a particular machine is redirected to the local share directory.

2.4 JDISS Background Processes

The following background processes are started by the JDISS_boot script (stored in /h/JDISS/Scripts directory) at system boot time:

ttsession (Supports the ELT imagery application)
chatterd (Supports Desktop Chatter)
chatmastd (" " ")
chataream (" " ")
synchrod (Supports the Synchronize calendar scheduler program)
JDISS_alerterv (Supports the JDISS Alerts program)

Normally the System Administrator should not need to modify the JDISS_boot script.